UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,087	07/06/2001	Ahmad Chini	3927P015	5864

8791 7590 11/18/2004

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
KIM, KEVIN	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/900,087	CHINI ET AL.	
	Examiner	Art Unit	
	Kevin Y Kim	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-7 and 14-20* is/are allowed.

6)☒ Claim(s) *8-13 and 21-25* is/are rejected.

7)☒ Claim(s) *12 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/11/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 12 and 24 are objected to because of the following informalities: The claims recite "Fourier transform" for modulating data samples on to a plurality of carriers. However, it is well established in the art that an inverse Fourier transform is used to generate a multi-carrier signal, as depicted in Fig. 1 of the present invention. Thus, "Fourier transform" is believed to be a typographical error of inverse Fourier transform and will be treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Schill et al (US 6,751,267).

Consider claims 8. Referring to Fig.3, Schill et al discloses a method of producing a multi-carrier signal, comprising the steps of;

receiving an input frame of data samples (104),

performing frequency domain modification on the data samples using a wave shaping filter (106a), see col. 4, lines 24-27, and

modulating the frequency-modified data samples onto a plurality of carriers (116).

Regarding claim 9, the transmit pulse filter bank reads on "a wave shaping filter" since raised cosine filters or root raised cosine filters, taught by Schill, modifies the frequency spectrum of the data samples. See col. 4, lines 26-39.

Regarding claim 10, raised cosine filters or root raised cosine filters, used by Schill et al, are a type of a finite impulse response (FIR) filter.

Regarding claim 11, the raised cosine filters or root raised cosine filters are essentially band limiting filters, thus reading on "a spectrum mask" to perform frequency domain modification.

Regarding claim 12 calling for [inverse] Fourier transform on the frequency modified data samples, see Inverse Fourier Transform block (116) in Fig.3 that performs the claimed function.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schill et al as applied to claim 8 above, in view of Rapeli (US 6,167,237).

Schill et al disclose all the claimed subject matter, as explained above in connection with base claim 8, but for "controlling said frequency domain modification to achieve a desired spectrum for said modulated multi-carrier signal." Rapeli teaches adjusting a transmit filter characteristics depending on interference detected. See col. 3, lines 1-17 and col. 4, line 67 – col.5, line 20. Thus, it would have been obvious to one skilled in the art at the time the invention was made to control the frequency-modifying filter of Schill et al for the purpose of allowing the use of a less complex filter, that saves power, in the case of no interference detection, as taught by Rapeli.

7. Claims 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Humphrey et al (US 6,130,918).

Consider claim 21. Referring to Fig.3, Humphrey et al discloses a method of producing a modulated multi-carrier signal, comprising;

receiving an input frame of data samples (34), see col.7, line 66 – col. 8, line 2, describing the receiving of information bits,

modulating said data samples onto a plurality of carrier signals (35), see col.8, lines 13-15, describing IFFT generating a plurality of subchannels,

performing time domain modification (40) of said carrier signals to form modulated multi-carrier signal (40), see col.8, lines 24-26 describing a filter (40).

Regarding claim 22 calling for "using a spectrum filter, the filter (40) in Humphrey is described to have "an appropriately shaped characteristic," thereby teaching spectrum shaping of the input signal to the filter.

Regarding claim 23, see cyclic extension (37) that increases the frequency resolution of respective carrier signals.

Regarding claim 24 calling for [inverse] Fourier transform on the frequency modified data samples, see Inverse Fourier Transform block (35) in Fig.3 that performs the claimed function.

Claim Rejections – 35 USC § 103

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey et al, as applied to claim 21 above, in view of Rapeli (US 6,167,237).

Humphrey et al disclose all the claimed subject matter, as explained above in connection with base claim 21, but for "controlling said time domain modification to achieve a desired spectrum for said modulated multi-carrier signal." Rapeli teaches adjusting a transmit filter characteristics depending on interference detected. See col. 3, lines 1-17 and col. 4, line 67 – col.5, line 20. Thus, it would have been obvious to one skilled in the art at the time the invention was made to control the filter 40 of Humphrey et al for the purpose of allowing the use of a less complex filter, that saves power, in the case of no interference detection, as taught by Rapeli.

Allowable Subject Matter

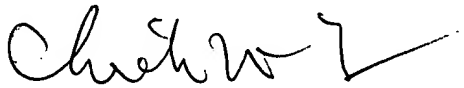
9. Claims 1-7, 14-20 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk



CHIEH M. FAN
PRIMARY EXAMINER